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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,613	09/25/2003	Ho Youb Cho	CU-3372 RJS	6778
26530	7590	03/26/2004	EXAMINER	
LADAS & PARRY 224 SOUTH MICHIGAN AVENUE, SUITE 1200 CHICAGO, IL 60604			HUR, JUNG H	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/670,613

Applicant(s)

CHO, HO YOUB

Examiner

Jung (John) Hur

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: search history.

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words in length.

Correction is required. See MPEP § 608.01(b).

### *Drawings*

2. The drawings are objected to because Fig. 3 is inconsistent with the description in the specification. Specifically, Fig. 3 shows that, when the signal `soseb_wt` is high (the right half of the figure), the signal `gio_ev` depends on the rising edge of the signal `dinr` (the right dashed arrow in the right half of the figure), and the signal `gio_od` depends on the falling edge of the signal `dinf` (the left dashed arrow in the right half of the figure); this dependencies, however, are inconsistent with the description on page 7 lines 15-20 of the instant specification. In light of other figures (for example, Figs. 1, 2A and 2B) along with other parts of the instant specification (for example, lines 10-14 on page 7), it appears that Fig. 3 is in error.

Art Unit: 2824

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because Fig. 8 appears to have an extraneous vertical line at the input side of the buffer 820. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(a) as being anticipated by admitted prior art ("Admission").

Regarding claim 1, Admission, in Figs. 1, 2A, 2B and 3, discloses a data input device of a DDR SDRAM comprising: a clock pulse generator (100); a data-in-strobe signal (dinstb); a first data buffer (120) an operation of which is controlled by the data-in-strobe signal (via, for example, 110 and 111); a first global input/output line (gio\_ev); a second data buffer (121) an operation of which is controlled by the data-in-strobe signal (via, for example, 110 and 111); and a second global input/output line (gio\_od); wherein if a second control signal (soseb\_wt) is in a

Art Unit: 2824

low level (see the left half of Fig. 3), first data (dinr) is directly applied (via dinr input terminal) to the first data buffer (120) to be transferred to the first globe input/output line (the right dashed arrow in the left half of Fig. 3; see also page 7 lines 10-14), and second data (dinf) is directly applied (via dinf input terminal) to the second data buffer (121) to be transferred to the second global input/output line (the left dashed arrow in the left half of Fig. 3; see also page 7 lines 10-14); and wherein if the second control signal (soseb\_wt) is in a high level, the first data (dinr) is directly applied (via dinr input terminal) to the second data buffer (121) to transferred to the second globe input/output line (see page 7 lines 15-20), and the second data (dinf) is directly applied (via dinf input terminal) to the first data buffer (120) to be transferred to the first global input/output line (see page 7 lines 15-20).

Regarding claims 2 and 4, Admission further discloses that the second signal (soseb\_wt) outputs a low level if the least significant bit (LSB) of a column address applied in the write mode is "0", and outputs a high level if the LSB of the column address is "1" (see for example page 2 line 16 through page 3 line 15); and that the first data buffer (120) selectively receives the first data (dinr) or the second data (dinf) through two input terminals (dinr and dinf input terminals of 120 and 121).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2824

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art ("Admission").

Regarding claim 3, Admission discloses a device as in claim 1 above, with the exception of the first data buffer selectively receiving the first data or the second data through one input terminal. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the first and second buffers of Admission such that the buffers (including the first data buffer) would selectively receive the first data (dinr) or the second data (dinf) through one input terminal, by incorporating a multiplexer at the input side of each buffer to select the first data (dinr) or the second data (dinf) (based on control signals dinstb\_ev and dinstb\_od, for example) to be transferred to the one input terminal of each buffer, since the use of multiplexers was common and well known in the art as an alternative, functionally equivalent means for selecting a signal from a plurality of signals (in this case, a plurality of data signals).

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujisawa et al. (U.S. Pat. No. 6,512,719) discloses a DDR SDRAM with even and odd data global input/output lines with respective data registers.

Kim et al. (U.S. Pat. No. 6,639,868) discloses a DDR SDRAM with a data latch circuit.

Borkenhagen et al. (U.S. Pat. No. 6,671,211) discloses a DDR SDRAM with a multiplexer to control a data latch.

Art Unit: 2824

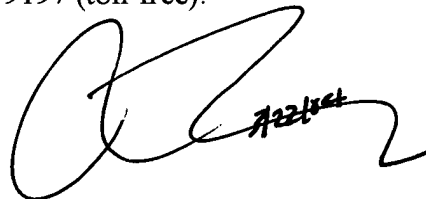
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung (John) Hur whose telephone number is (571) 272-1870.

The examiner can normally be reached on M-F 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jhh

A handwritten signature in black ink, appearing to be 'Richard Elms', with a date '7/22/04' written in the middle of the signature.

**RICHARD ELMS**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800